

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (Canceled).

Claim 19 (Currently amended): ~~The vehicle drivetrain according to claim 18 wherein~~ A vehicle drivetrain comprising:

an engine having a PTO, power take-off, shaft;

a first transmission below said engine and driven by said PTO shaft;

5 a second transmission above said first transmission and horizontally adjacent said engine, said second transmission having an input driven by said first transmission, and an output providing vehicle propulsion;

wherein:

said PTO shaft extends vertically downwardly;

10 said second transmission has a downwardly extending vertical input shaft;

said first transmission is a constant velocity clutch continuously variable transmission, CVT, having a first pulley driven by said PTO shaft, a second pulley driving said input shaft of said second transmission, and a belt extending around said pulleys and driving said second pulley from said first pulley, said pulleys rotating in a
15 horizontal plane;

and comprising:

a CVT mounting case housing said first and second pulleys, and wherein said engine and said second transmission are each mounted to said CVT mounting case at respective first and second mounting attachment locations precisely spaced and

20 aligned to provide precise spacing of the centerlines of said PTO shaft and said input shaft of said second transmission and precise alignment of such shafts in parallelism;
a power transfer device driven by said output of said second transmission to transfer power to propel the vehicle;

wherein:

25 said power transfer device comprises a pair of drive shafts driven in torque balancing counter-rotation, at least one of said drive shafts providing vehicle propulsion;
and

said power transfer device comprises a power transfer rotary drive member driven by said output of said second transmission, and comprising a transfer case housing
30 said power transfer rotary drive member, wherein said transfer case is mounted to said second transmission, the first of said drive shafts is mounted to said transfer case in journaled relation, and the second of said drive shafts is mounted to said CVT mounting case in journaled relation.

Claims 20-21 (Canceled).

Claim 22 (Currently amended): ~~The vehicle drivetrain according to claim 21~~ A vehicle drivetrain comprising:

an engine having a PTO, power take-off, shaft;

a first transmission below said engine and driven by said PTO shaft;

5 a second transmission above said first transmission and horizontally adjacent said engine, said second transmission having an input driven by said first transmission, and an output providing vehicle propulsion;

wherein:

said PTO shaft extends vertically downwardly;

10 said second transmission has a downwardly extending vertical input shaft;

 said first transmission is a constant velocity clutch continuously variable
transmission, CVT, having a first pulley driven by said PTO shaft, a second pulley
driving said input shaft of said second transmission, and a belt extending around said
pulleys and driving said second pulley from said first pulley, said pulleys rotating in a
15 horizontal plane;

and comprising:

a CVT mounting case housing said first and second pulleys, and wherein
said engine and said second transmission are each mounted to said CVT mounting case
at respective first and second mounting attachment locations precisely spaced and
20 aligned to provide precise spacing of the centerlines of said PTO shaft and said input
shaft of said second transmission and precise alignment of such shafts in parallelism;

a power transfer device driven by said output of said second transmission
to transfer power to propel the vehicle;

a transfer case housing said power transfer device and mounted to at least
25 one of said second transmission and said CVT mounting case;

 wherein said power transfer device comprises a power transfer rotary drive
member driven by said output of said second transmission, wherein said transfer case is
mounted to both said second transmission and said CVT mounting case for enhanced
rigidity of the combination of said CVT mounting case and components mounted thereto,
30 namely said engine, said second transmission and said transfer case mounted thereto.

Claim 23 (Canceled).

Claim 24 (Currently amended): ~~The vehicle drivetrain according to claim 23 wherein A~~
vehicle drivetrain comprising:

an engine having a PTO, power take-off, shaft;

a first transmission below said engine and driven by said PTO shaft;

5 a second transmission above said first transmission and horizontally adjacent said engine, said second transmission having an input driven by said first transmission, and an output providing vehicle propulsion;

wherein:

said PTO shaft extends vertically downwardly;

10 said second transmission has a downwardly extending vertical input shaft;

said first transmission is a constant velocity clutch continuously variable transmission, CVT, having a first pulley driven by said PTO shaft, a second pulley driving said input shaft of said second transmission, and a belt extending around said pulleys and driving said second pulley from said first pulley, said pulleys rotating in a
15 horizontal plane;

and comprising a CVT mounting case housing said first and second pulleys, and wherein said engine and said second transmission are each mounted to said CVT mounting case at respective first and second mounting attachment locations precisely spaced and aligned to provide precise spacing of the centerlines of said PTO
20 shaft and said input shaft of said second transmission and precise alignment of such shafts in parallelism;

wherein:

said CVT mounting case is a sealed case enclosing and protecting said pulleys and said belt against the elements, including water; and

25 said CVT mounting case has an air inlet port, an air outlet port, and an air circuit duct therein directing air from said air inlet port around said pulleys and said belt for cooling same, and then to said air outlet port.

5 Claim 25 (Original): The vehicle drivetrain according to claim 24 wherein said CVT mounting case has a lower clamshell portion having a pair of upstanding walls horizontally spaced from each other and defining a supply passage therebetween extending from said air inlet port and directing cooling air to cool said pulleys and said belt.

Claim 26 (Original): The vehicle drivetrain according to claim 25 wherein said pulleys are separated by a gap, and said supply passage extends to an area below said gap.

Claim 27 (Original): The vehicle drivetrain according to claim 26 wherein said lower clamshell portion has a deflector ramp in said supply passage deflecting cooling air upwardly to said gap.

Claim 28 (Original): The vehicle drivetrain according to claim 26 comprising a transfer duct extending from said lower clamshell portion upwardly into said gap between said pulleys and spaced laterally inwardly of said belt and transferring cooling air from said supply passage.

Claim 29 (Canceled).

Claim 30 (Original): The vehicle drivetrain according to claim 24 wherein said first pulley includes a fan circulating cooling air from said air inlet port to said air outlet port during rotation of said first pulley.

Claim 31 (Original): The vehicle drivetrain according to claim 25 wherein said lower clamshell portion has an outer peripheral sidewall defining a return passage between said sidewall and said upstanding walls, and wherein said air outlet port is through said outer peripheral sidewall.

Claim 32-59 (Canceled).

Claim 60 (New): A vehicle drivetrain comprising:

an engine having a PTO, power take-off, shaft;

a first transmission below said engine and driven by said PTO shaft;

5 a second transmission above said first transmission and horizontally
adjacent said engine, said second transmission having an input driven by said first
transmission, and an output providing vehicle propulsion;

said drivetrain propelling the vehicle in a forward direction;

said PTO shaft extending vertically;

10 said input of said second transmission being a vertical input shaft aft of
said PTO shaft;

said output of said second transmission being a horizontal shaft aft of said
vertical input shaft.

Claim 61 (New): The vehicle drivetrain according to claim 60 wherein said horizontal
shaft of said output of said second transmission extends aft of said vertical input shaft of
said second transmission and parallel to said forward direction.

Claim 62 (New): A drivetrain for a vehicle having a frame, comprising:

an engine having a PTO, power take-off, shaft;

a first transmission below said engine and driven by said PTO shaft;

5 a second transmission above said first transmission and horizontally
adjacent said engine, said second transmission having an input driven by said first
transmission, and an output providing vehicle propulsion;

said PTO shaft being a vertical shaft;

said input of said second transmission being a vertical shaft;

said first transmission being mounted to said vehicle frame;

- 10 each of said engine and said second transmission being mounted to said
first transmission at an upper surface thereof independently of said vehicle frame such
that said PTO shaft of said engine and said input shaft of said second transmission extend
vertically and in parallel above said first transmission independently of said vehicle
frame and according independently of torsional twisting of said vehicle frame under load
15 otherwise causing misalignment and non-parallelism of said vertical PTO shaft of said
engine and said vertical input shaft of said second transmission.

Claim 63 (New): A modular pre-assembled unit ready for drop-in mounting to a vehicle
having a frame, and providing a drivetrain for the vehicle, comprising in combination:

- an engine having a PTO, power take-off, shaft;
- a first transmission below said engine and driven by said PTO shaft;
- 5 a second transmission above said first transmission and horizontally
adjacent said engine and having an input driven by said first transmission;
- shock and vibration absorbing pads mounting said first transmission to said
vehicle frame;
- said engine and said second transmission being mounted to said first
10 transmission independently of said vehicle frame.

Claim 64 (New): The modular pre-assembled unit according to claim 63 wherein said
first transmission with said engine and said second transmission mounted thereto
comprise said modular pre-assembled unit for drop-in mounting to said vehicle.

- Claim 65 (New): The modular pre-assembled unit according to claim 63 comprising:
- 15 a power transfer device driven by said second transmission to transfer
power to propel the vehicle;
- wherein:

said PTO shaft extends downwardly and vertically;

20 said first transmission is a constant velocity clutch continuously variable transmission, CVT, having a first pulley driven by said PTO shaft, and a second pulley driven by a belt extending around said pulleys, said pulleys rotating in a horizontal plane;

 said second transmission is a 90° gear transmission having a downwardly extending vertical input shaft driven by said second pulley, and a horizontal output shaft;

25 said power transfer device comprises a power transfer rotary drive member driven by said output shaft of said second transmission;

 and comprising a CVT mounting case housing said first and second pulleys;

 wherein:

30 said engine and said second transmission are each mounted to said CVT mounting case at respective first and second mounting attachments precisely spaced and aligned to provide precise spacing of the centerlines of said PTO shaft and said input shaft of said second transmission and precise alignment of said shafts in parallelism;

 and comprising a transfer case housing said power transfer rotary drive member and mounted to at least one of said second transmission and said CVT mounting
35 case.

Claim 66 (New): A method for installing drivetrain components in a vehicle having a frame, comprising:

 providing an engine having a PTO, power take-off, shaft;

 providing a first transmission driven by said PTO shaft;

5 providing a second transmission having an input driven by said first transmission, and an output providing vehicle propulsion;

mounting said engine and said second transmission to said first transmission as a self-contained pre-assembled modular unit;

10 mounting said first transmission on shock and vibration absorbing pads to said vehicle frame, such that said first transmission is isolated from said vehicle frame by said shock and vibration absorbing pads, and such that said engine and said second transmission are isolated from said vehicle frame by said first transmission and said shock and vibration absorbing pads.

Claim 67 (New): The method according to claim 66 comprising mounting said engine and said second transmission to said first transmission prior to mounting said first transmission to said vehicle frame.

Claim 68 (New): The method according to claim 66 comprising providing a power transfer device comprising a rotary transfer drive member driven by said output of said second transmission, housing said power transfer rotary drive member in a transfer case, and mounting said transfer case to at least one of said first and second transmissions prior
5 to mounting said first transmission to said vehicle frame.